SUMMARY

S.1 INTRODUCTION

The Small Erosion Repair Program (SERP) is a collaborative interagency effort to develop a streamlined regulatory review and authorization process that will facilitate implementation of annual repairs of small erosion sites on levees within the Sacramento River Flood Control Project (SRFCP) area. The SRFCP contains approximately 900 to 1,000 miles of levees. For the initial 5-year (Phase 1) SERP effort, the coverage area is a subset of the SRFCP and represents approximately 300 miles of levees maintained by the California Department of Water Resources (DWR) (see Exhibit S-1).

DWR, as lead agency under the California Environmental Quality Act (CEQA), has prepared this draft program environmental impact report (DEIR) to inform agencies and the public about the potential environmental effects of the SERP. This DEIR has been prepared in accordance with CEQA (Public Resources Code section 21000 et seq.) and State CEQA Guidelines. This DEIR is a "program" EIR intended to provide information at a general (or programmatic) level of detail on the potential impacts of implementing the SERP, as described by section 15168(a) et seq. of the CEQA Guidelines.

S.2 BACKGROUND

Levees that sustain erosion damage during winter periods of high flows may undergo further erosion that over time could lead to levee failure and cause substantial flood damage in both urban and nonurban environments. Such levee failures can also cause significant adverse effects on the surrounding fish and wildlife resources. Erosion sites need to be repaired in a timely manner to maintain the integrity of the existing flood management system. Expedient repairs can also prevent further damage to the environment at these sites. Currently, small erosion repair projects require permits to be issued on a project-by-project basis. The multiple authorizations and level of interagency coordination required for individual repairs (e.g., Clean Water Act permits from U.S. Army Corps of Engineers [USACE], Endangered Species Act compliance with U.S. Fish and Wildlife Service [USFWS] and National Marine Fisheries Service [NMFS], streambed alteration agreements from California Department of Fish and Wildlife [CDFW], and water quality certification with the Regional Water Quality Control Board

[RWQCB]) have often resulted in substantial delays, during which time the eroded areas have been susceptible to further damage, increasing potential public safety hazards and repair costs as repair projects are delayed.

To address this problem, the SERP Subcommittee was formed at the direction of the Interagency Flood Management Collaborative Program Group (Interagency Collaborative

Group) on January 17, 2007. The Subcommittee consists of a group of federal and state resource agency representatives charged with defining what constitutes a small erosion repair and determining appropriate repair designs that will adequately protect the levee system while avoiding substantial adverse effects on environmental resources. The Subcommittee members have worked in concert to craft a program intended to improve current erosion repair practices, and thus to maintain the necessary level of flood risk reduction while seeking to achieve a cumulative net benefit to aquatic and terrestrial fish and wildlife resources, including habitat for sensitive species.

As part of this program, the SERP Subcommittee developed the SERP Manual (Appendix B of this DEIR), which provides the general guidelines under which the program would operate. The SERP Subcommittee has developed guidelines in several areas such as project design, conservation measures, and monitoring and reporting requirements. Additionally, a CEQA Compliance Checklist developed by DWR based on the environmental analysis in this DEIR would be used to ensure that, for each project site, repairs conducted under the SERP would comply with CEQA and to provide substantial information to streamline permitting.

Local maintaining agencies, including DWR's maintenance yards, maintain the levees along the waterways listed below, all of which will be eligible for inclusion in the SERP (see Exhibit S-1):

- Butte Creek
- Cache Creek from the Yolo Bypass to the upstream limit of the SRFCP levees
- Cherokee Canal
- Colusa Bypass
- Northern portion of Colusa Main Drain, as identified in Exhibit S-1
- Portions of Feather River, as identified in Exhibit S-1
- Putah Creek
- Sacramento Bypass
- Portions of Sacramento River, as identified in Exhibit S-1
- Sutter Bypass Tisdale Bypass
- Wadsworth Canal
- Willow Slough Bypass
- Portions of Yolo Bypass, as identified in Exhibit S-1
- East and West Interceptor Canals

Only the waterways identified above are included in the SERP for Phase 1. After Phase 1 is complete, the program's success will be evaluated and the SERP coverage area could be expanded to include the repair of erosion sites along the leveed sections of the remaining waterways.

Source: DWR 2009, Adapted by AECOM 2010

Exhibit S-1 **Phase 1 SERP Coverage Area**

S.3 PROJECT PURPOSE AND OBJECTIVES

The purpose of the SERP is to ensure the continued flood management integrity of the SRFCP levees while protecting environmental resources by providing an efficient method of selecting, evaluating, and permitting small erosion repair projects. The SERP uses programmatic authorizations, issued by federal and state agencies with regulatory obligations associated with erosion repair projects to streamline the process for implementing small erosion repairs in accordance with conservation-based design and monitoring standards established by the SERP Subcommittee. Projects that qualify under the SERP are eligible to receive authorization within a shortened time frame because they are designed to minimize effects on fish and wildlife resources, including listed species, and to protect and enhance the existing aquatic and riparian habitats comprising the riverine corridor.

The program sets apart similar small erosion repair sites and develops a streamlined permitting process for these sites with the following goals:

- provide quicker repairs to small erosion sites, thereby preventing erosion areas from becoming larger,
- foster consistent regulatory compliance efforts for similar repairs, from the standpoint of both environmental protection and operations and maintenance, and
- obtain measurable data to evaluate program success.

The identified objectives of the proposed levee/bank repairs will be to:

- maintain SRFCP integrity,
- prevent further erosion and loss of riparian and nearshore aquatic habitat,
- minimize the loss of riparian vegetation and endangered species habitat resulting from delayed repairs and construction activities, and
- enhance the existing riparian vegetation corridor at the erosion sites, where applicable.

S.4 PROJECT DESCRIPTION

S.4.1 PROJECT CHARACTERISTICS

EROSION REPAIR PROJECT IDENTIFICATION AND CHARACTERIZATION

Implementation of SERP would begin with DWR maintenance staff conducting annual maintenance surveys each spring to identify small erosion sites that need repairs within the Phase 1 SERP coverage area. DWR engineering, environmental, and archaeological staff

members would conduct a baseline assessment at each site and complete a Baseline Assessment Checklist in accordance with the SERP Manual. The completed checklist would include information about existing soil, levee, and vegetation conditions, and potential habitat for special-status species and cultural resources at the site. A maximum of 15 individual repair projects would be implemented annually under the SERP during Phase 1 of the program. Potential SERP repair sites would be categorized into two tiers based on the size of the project disturbance area (0.1 acre or less with a maximum linear foot limit of 264 feet, or 0.5 acre or less with a maximum linear foot limit of 1,000 feet).

For each proposed site, DWR would select as a guide one of seven SERP design templates created by the collaborating agencies and identified in the SERP Manual to apply to the site. The program design templates are described in more detail in Section S.3.2, “Program Elements,” below.

DWR would notify the applicable permitting agencies—USACE, USFWS, NMFS, CDFW, and RWQCB—of the proposed small erosion repair projects by bundling and submitting the required notification materials for up to 15 projects to the agencies as a package each spring (by June 1). The notification package would include a CEQA Compliance Checklist for SERP projects to document that each small erosion repair project and site is consistent with the findings and parameters of this DEIR and the SERP Manual prepared for the SERP. The CEQA Compliance Checklist would be based on the findings of the SERP Final DEIR and used to determine whether the EIR provides adequate CEQA coverage for each of the SERP projects or if further project-level environmental documentation would be required to fully satisfy CEQA requirements. Upon receipt of the annual SERP notification package, the agencies would review the projects and independently respond to DWR, indicating whether the projects are acceptable under their programmatic SERP authorizations, and including any additional terms or conditions for approval in their responses. Upon receiving the agencies’ verification of SERP authorization, DWR may proceed with the repairs in accordance with the applicable conservation measures in the SERP Manual) and any additional terms or conditions for approval that the agencies may require. This process should shorten the permitting time frame for those projects, allowing the necessary repairs to be implemented in a timely manner while fully considering and protecting environmental resources.

SITE REPAIRS

Construction activities would take place at individual sites throughout each summer and fall during the 5-year Phase 1 period. Each site would require no more than 1–4 weeks of active construction. Effective construction and replanting methods, employed in the recent past for similar small erosion control projects, would be used. Bank reconstruction would in most cases incorporate plantings into the revetment in accordance with the bioengineering techniques outlined in the program design templates. The upper bank would be seeded and may be

covered with biodegradable materials to control erosion and stabilize the bank. Willow cuttings and other native vegetation would be installed during placement of the revetment or after construction during the appropriate planting season.

The program design templates have been developed with the intent that once repaired the erosion sites would require little or no additional upkeep or maintenance. During the initial vegetation establishment period, maintenance activities for planted areas may include removing invasive vegetation, pruning planted vegetation for visibility and accessibility on levees, and replacing dead plantings. Once the final success criteria are achieved, the vegetation should be self-maintaining. Maintenance activities that focus on maintaining restoration plantings, in particular woody vegetation plantings, would be conducted for 5 years or longer as necessary until the final success criteria are met by DWR.

S.4.2 Program Elements

Design Alternatives

The SERP Subcommittee discussed 13 repair alternatives and decided that the SERP would use seven design templates:

1. Bank fill rock slope with live pole planting
2. Willow wattle with rock toe
3. Branch layering
4. Rock toe with live pole planting
5. Soil and rock fill at the base of a fallen tree (including root wad revetment option)
6. Bank fill rock slope with native grass planting
7. Bank fill rock slope with emergent vegetation planting

Plans and descriptions of the seven design templates are included in the SERP Manual.

Conservation Measures

Conservation measures in the SERP Manual have been developed in coordination with the agencies represented on the SERP Subcommittee. Measures have been identified that would be applicable to all SERP project sites, including timing restrictions to avoid work during important times for various special-status species, measures to avoid vegetation and habitat disturbance, hazard prevention measures, erosion control measures, and other mandatory construction measures.

S.5 AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

Several areas of controversy associated with implementation of the SERP have been identified and are described briefly below.

- **The appropriate level of vegetation management on levees**. In the wake of Hurricane Katrina, USACE has revisited its nationwide policies regarding vegetation management. USACE currently requires that all woody vegetation be removed from levees in the absence of a USACE-issued variance, if maintaining agencies such as DWR wish to retain eligibility for federal emergency repair funding under Public Law 84-99. This policy is memorialized in USACE's Engineering Technical Letter 1110-2-571, *Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures*, adopted April 10, 2009. DWR does not believe that the presence of properly maintained woody vegetation on "legacy levees" constitutes a degree of risk that necessarily requires removal of vegetation. In fact, in some circumstances, vegetation can help protect levees from erosion and other risk factors, while also providing important habitat values.

- **Coordination with other collaborative processes and local planning efforts.** Multiple ongoing planning efforts in the Central Valley (e.g., the CVFPP, CALFED Bay-Delta Program, Bay Delta Conservation Plan, habitat conservation plans/natural communities conservation plans) overlap with the SERP in both geography and scope. Challenges exist when balancing the needs of these many efforts where jurisdictions and project timing overlap, and where the actions of one program may preclude (or limit) the actions of another.

S.6 ALTERNATIVES TO THE PROPOSED PROJECT

Based on scoping and agency consultation, as well as the alternatives formulation and evaluation process conducted by the SERP Subcommittee, the following program alternatives were identified for evaluation in this DEIR:

- **No-Project Alternative**—CEQA Guidelines section 15126.6(e)(2) states that a discussion of the "No Project" alternative must consider "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans." The No-Project Alternative assumes that the SERP would not be initiated, and no collaborative programmatic repair program would be put in place by DWR. Instead, erosion repairs would continue to be identified by DWR, permitted individually by the applicable regulatory agencies, and implemented when permits were obtained, as is currently done. DWR would continue the status quo, implementing a range of unrelated erosion repairs on a project-by-project basis.

Under this alternative, a number of minor repairs would be conducted by various maintenance yards, and would qualify as categorical exemptions under CEQA. Therefore, by definition, these minor repairs would have less-than-significant impacts on the physical environment. DWR would also typically be able to complete CEQA evaluations and obtain federal and state agency authorizations each year to repair one or two levee sections that meet the size requirements of SERP under this alternative. The agency authorizations obtained through this process would stipulate avoidance, minimization, conservation, and compensation measures to reduce potentially significant impacts on the environment to a less-than-significant level. However, more repairs than these would be needed each year. Because of the lengthy process associated with CEQA compliance and permit acquisition, a number of these sites would be left unrepaired and would likely be further eroded during severe weather patterns. This would result in the need for more emergency repairs each year relative to the proposed project, and emergency repairs would be made using only rock. The No-Project Alternative would not meet most DWR project objectives and was determined to be infeasible. It was included in the analysis, however, as required by CEQA Guidelines section 15126(e).

- **Large-Scale Erosion Repair Program Alternative**—A large-scale programmatic erosion repair program would be developed, similar to the SERP, to permit one to three projects per year, with a combined maximum area or length of disturbance equal to the SERP. Therefore, the Large-Scale Erosion Repair Program in a given year could include one project with up to 7.5 acres or 15,000 linear feet in size, or two to three individual projects of any size, as long as the maximum combined area or length permitted in that year did not exceed 7.5 acres or 15,000 linear feet. The bioengineering designs proposed under the SERP could be used for the Large-Scale Erosion Repair Program Alternative, but at a larger scale. Construction equipment and methods would be similar to the proposed program. This alternative meets most project objectives and is considered to be a feasible alternative.

- **Native Soil Disturbance Minimization Alternative**—This alternative would permit the same number of erosion repair projects as the SERP (up to 15), with the same acreage and linear-foot limitations per site as the SERP, but in areas where disturbance of native soil for site preparation could be avoided, revetment could be installed directly on the native soil with no grading or excavating required, and plantings would be permitted only in the levee fill. Under this alternative, disturbance of native soil would not be precluded where the erosion repair required the disturbance of this soil to ensure efficacy of the design from an engineering standpoint; however, erosion repair methods not requiring disturbance of native soil would be favored. The same number of acres or linear feet of disturbance would occur under this alternative as under the SERP, but some of the repairs would avoid disturbance of native soil. In these cases, because vegetation planting would be restricted

to levee fill, the repairs would generally result in vegetation plantings farther away from the aquatic habitat than would occur under the SERP. Construction equipment and methods would be similar to the proposed program except as described above. This alternative meets most project objectives and is considered to be a feasible alternative.

S.7 SUMMARY OF ENVIRONMENTAL IMPACTS ON THE PROPOSED PROJECT

The PEIR impact analysis examines all potentially significant impacts that would occur with implementation of the SERP. Impacts and mitigation measures are described for proposed activities under SERP.

The impact analysis addresses potential direct and indirect impacts associated with construction and operations and maintenance. Potential environmental impacts of the proposed program and associated mitigation measures are summarized in Table S-2 at the end of this Summary.

S.8 COMPARISON OF ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT AND ALTERNATIVES

This section compares the environmental impacts of each of the alternatives (described above) with the impacts of the SERP.

The CEQA Guidelines (section 15126.6[d]) permit evaluation of the alternatives in less detail than for the proposed project. Consistent with section 15126.6(d) of the CEQA Guidelines, the analysis of alternatives to the proposed program generally compares the environmental effects of the alternatives against the effects of the SERP, focusing on whether the alternative would result in effects greater than, less than, or similar to those identified for the SERP.

Table S-1 provides a summary comparison of the impact levels of the proposed program and alternatives. The impact levels listed for the SERP in Table S-1 reflect the most substantial environmental effects identified for each environmental resource area.

Table S-1
Comparison of Impact Levels of the Proposed Program and the Alternatives

Environmental Resource	Proposed Program [1]	No-Project Alternative	Large-Scale Erosion Repair Program Alternative	Native Soil Disturbance Minimization Alternative
Air Quality and Climate Change	Less than significant after mitigation	Greater	Similar	Similar

Table S-1 Comparison of Impact Levels of the Proposed Program and the Alternatives				
Environmental Resource	**Proposed Program [1]**	**No-Project Alternative**	**Large-Scale Erosion Repair Program Alternative**	**Native Soil Disturbance Minimization Alternative**
Biological Resources	Less than significant	Greater	Greater	Greater
Cultural Resources	Less than significant after mitigation	Greater	Greater	Lesser
Geology, Soils, and Paleontological Resources	Less than significant	Greater	Greater	Similar
Hydrology and Water Quality	Less than significant	Greater	Greater	Similar
Noise	Less than significant after mitigation	Greater	Greater	Similar

Notes:
[1] Impact categories listed for the proposed program provide the most severe impact category identified for the environmental issue area.

S.9 NEXT STEPS FOR THE PEIR

This DEIR is being circulated to federal, state, and local agencies involved with the proposed program and made available to interested organizations and individuals who may wish to review and comment on the document. The 45-day public review period begins on March 20, 2013, and ends on May 3, 2013. During that period, written comments on the environmental document may be sent to DWR at the following address:

Jeff Schuette
California Department of Water Resources
Division of Flood Management
3310 El Camino Avenue, Suite 100
Sacramento, CA 95821
E-mail: jschuett@water.ca.gov

Copies of the DEIR can be reviewed at:

California Department of Water Resources
Division of Flood Management
3310 El Camino Avenue, Suite 100
Sacramento, CA 95821
9am-5pm Monday through Friday

Chico Branch Library
1108 Sherman Avenue
Chico, CA 95926
9am-5pm Monday, Friday and Saturday
9am-7pm Tuesday through Thursday

Sutter County Free Library
750 Forbes Avenue
Yuba City, CA 95991
10:00am-7:00pm Monday through Thursday
10:00am-5:00pm Friday & Saturday

Sacramento Public Library, Central Library
828 I Street
Sacramento, CA 95814
12pm-5pm Sunday
10am-8pm Tuesday
10am-6pm Wednesday through Thursday
12pm-6pm Friday
10am-5pm Saturday

Rio Vista Library
44 South Second Street
Rio Vista, CA 94571
10am-6pm Monday and Wednesday
10am-9pm Tuesday and Thursday
10am-5pm Friday and Saturday

Following receipt of comments and the close of the public comment period, DWR will prepare a FEIR that considers and responds to comments on significant environmental issues in the DEIR. The FEIR will be circulated for at least 10 days prior to EIR certification to public agencies that submitted comments.

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
3.2 Air Quality and Climate Change			
Impact 3.2-1: Construction-Related Emissions that Could Exceed Local Thresholds of Significance	Potentially Significant (PS)	**Mitigation Measure 3.2-1: Implement Applicable Air District–Recommended Mitigation Measures for Particulate Matter and Exhaust Emissions** California Department of Water Resources (DWR) will incorporate the following measures to reduce emissions of fugitive dust (PM_{10} and $PM_{2.5}$) during construction activities: • Comply with applicable air district rules and regulations that pertain to construction activities (e.g., asphalt reactive organic gases requirements, administrative requirements, and fugitive dust management practices). As applicable, implement construction-related requirements from air districts or local governments with authority over the project at the commencement of and during each construction activity. • Do not use open burning to dispose of any excess materials generated during site preparation or other project activities. • Schedule construction truck trips during nonpeak traffic hours to reduce peak-hour emissions and traffic congestion to the extent feasible. • Follow air pollution regulations, which includes the use of diesel-powered construction equipment and equipment idle times, that meet	Less than Significant (LTS)

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
		CARB's 1996 or newer certification standard for in-use off-road heavy-duty diesel engines [California Code of Regulations: (article 4.8, chapter 9, division 3 of title 13)] • Maintain all construction equipment in proper working condition and perform all preventative maintenance. Required maintenance includes compliance with all manufacturer's recommendations, proper upkeep and replacement of filters and mufflers, and maintenance of all engine and emissions systems in proper operating condition. • Check all tires and maintain for proper inflation.	
Impact 3.2-2: Operations-Related Criteria Pollutants and Precursors that Could Exceed Local Thresholds of Significance	LTS	NA	LTS
Impact 3.2-3: Operations-Related Carbon Monoxide (CO) Emissions that Could Exceed Local Thresholds of Significance	LTS	NA	LTS
Impact 3.2-4: Exposure of Sensitive Receptors to Toxic Air Contaminants (TAC) Emissions	LTS	NA	LTS

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
Impact 3.2-5: Temporary Exposure of Sensitive Receptors to Odors during Construction	LTS	NA	LTS
Cumulative Impact: Construction-Related Greenhouse Gas Emissions (see Section 5.1, "Cumulative Impacts")	PS	**Mitigation Measure 3.2-1: Implement Applicable Air District–Recommended Mitigation Measures for Particulate Matter and Exhaust Emissions** **Mitigation Measure 5-1: Implement Pre-Construction, Final Design, and Construction BMPs** Pre-construction and Final Design BMPs are designed to ensure that individual projects are evaluated and their unique characteristics are taken into consideration when determining whether specific equipment, procedures, or material requirements are feasible and efficacious for reducing GHG emissions from a project. In addition to mitigation measures defined in the various sections of this EIR, the following BMPs will be applied as applicable and appropriate: • **BMP 1**. Evaluate project characteristics, including location, project work flow, site locations, and equipment performance requirements, to determine whether specifications for the use of equipment with repowered engines, electric drive trains, or other high-efficiency technologies are appropriate and feasible for the project or specific elements of the project.	LTS

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
		• **BMP 2**. Evaluate the feasibility and efficacy of performing on-site material hauling with trucks equipped with on-road engines. • **BMP 3**. Coordinate opportunities to carpool to the construction site. • **BMP 4**. Reduce electricity use in temporary construction offices by using high-efficiency lighting and requiring that heating and cooling units be Energy Star compliant. Require that all contractors develop and implement procedures for turning off computers, lights, air conditioners, heaters, and other equipment each day at close of business. • **BMP 5**. For deliveries to project sites where the haul distance exceeds 100 miles and a heavy-duty class 7 or class 8 semi-truck or 53-foot or longer box-type trailer is used for hauling, a SmartWay certified truck will be used to the maximum extent feasible. • **BMP 6**. Recycle construction debris to reduce construction waste. Construction BMPs would apply to all construction and maintenance projects that DWR completes or for which DWR issues contracts. All the SERP projects are expected to implement all construction BMPs.	

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
3.3 Biological Resources			
Impact 3.3-1: Temporary Effects to Fish and Aquatic Habitat Resulting from Construction	LTS	NA	LTS
Impact 3.3-2: Temporary Construction-Related Disturbance or Loss of Special-Status Fish or Wildlife Species and Habitats	LTS	NA	LTS
Impact 3.3-3: Long-Term Effects to Special-Status and Common Fish and Wildlife and Habitats	Beneficial (B)	NA	B
Impact 3.3-4: Loss or Disturbance of Special-Status Plant Species and Habitats	LTS	NA	LTS
Impact 3.3-5: Discharge of Dredged or Fill Material into Jurisdictional Waters of the United States	LTS	NA	LTS
Impact 3.3-6: Temporary Loss or Degradation of Riparian Habitat/Forest or Other Sensitive Natural Communities	LTS	NA	LTS
Impact 3.3-7: Long-Term Effects on Riparian Habitats/Forests	B	NA	B

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
Impact 3.3-8: Conflict with Tree Preservation Ordinances	LTS	NA	LTS
Impact 3.3-9: Conflict with an Adopted Habitat Conservation Plan	No Impact (NI)	NA	NI
3.4 Cultural Resources			
Impact 3.4-1: Potential Impacts on Identified Cultural Resources	PS	**Mitigation Measure 3.4-1: Comply with the Programmatic Agreement (PA) Prepared by U.S. Army Corps of Engineers (USACE), State Historic Preservation Officer (SHPO), and DWR; Consult with Stakeholders as Required under Section 106 and the PA; Perform Site-specific Technical Studies to Identify and Evaluate Cultural Resources; and Implement Avoidance or Treatment Protocols as Necessary to the Extent Feasible** Management of cultural resources for the SERP would be performed under a PA prepared by USACE. DWR will perform technical studies and treatment required to identify and manage impacts on cultural resources subject to the input of stakeholders and the approval of USACE and the SHPO. Management of cultural resources required under the California Environmental Quality Act (CEQA) would be combined with the management protocols stipulated in the PA. Prior to implementation of individual small erosion repair activities, DWR will perform the following steps:	LTS

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
		• conduct an inventory of the individual small erosion repair site and define an APE as required under section 106; • evaluate identified resources eligible for listing in the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR); • determine if the proposed activity would result in significant impacts on resources eligible for the CRHR or adverse effects on historic properties within the meaning of section 106; • resolve significant impacts either by developing resource-specific treatment protocols or by selecting and implementing treatment measures from a palette of treatment protocols developed pursuant to the PA; and • consult with stakeholders and consulting parties under the PA such as the SHPO. The inventory, evaluation, and selection of treatment will include a review of relevant local land use policies regarding cultural resources.	
Impact 3.4-2: Potential Impacts on Assumed Historically Significant Levees	LTS	NA	LTS

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
Impact 3.4-3: Impacts on Previously Unidentified Cultural Resources	PS	**Mitigation Measure 3.4-3: Train Construction Workers before Construction Begins, Monitor Construction Activities, Stop Potentially Damaging Activities, Evaluate Discovery(ies), and Resolve Adverse Effects on Significant Resources** DWR will implement the following measures to minimize potential impacts on previously undiscovered cultural resources: • Every 2 years or before construction begins, construction crews will be given a presentation and training session incorporated into the environmental awareness training before performing work in areas sensitive for previously unidentified resources so that they can assist with identifying undiscovered cultural resource materials and avoid them where possible. • A DWR archaeologist, where appropriate, will monitor all ground-disturbing construction activities at locations determined to be sensitive for unidentified cultural resources. If a previously unidentified archaeological resource is uncovered during construction, construction activities will be halted within 100 feet of the find and USACE, and other appropriate parties, will be notified regarding the discovery. • DWR will then consult with USACE and the SHPO to determine the eligibility of the resource for listing in the NRHP or qualification	LTS

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
		as a unique archaeological resource. If DWR and USACE, in consultation with the SHPO, concur that the resource is eligible for listing and the project may result in adverse effects or significant impacts on the resource, DWR either will implement one of the treatment protocols developed under the PA for the resource or will prepare a resource-specific treatment plan. • Work may only resume when either all necessary treatment has been performed under the treatment method selected, or approved by the appropriate entity, or construction in the vicinity of the resource will not result in adverse effects or encroach within an appropriate distance from the known boundaries of the resource or the boundaries of the resource.	
Impact 3.4-4: Impacts on Previously Unidentified Human Remains	PS	**Mitigation Measure 3.4-4: Stop Work in the Event of a Discovery of Human Remains, Notify the Applicable County Coroner and Most Likely Descendant, and Treat Remains in Accordance with State Law and Measures Stipulated in the Programmatic Agreement Prepared by USACE and the SHPO** DWR will ensure that the following measures are implemented to address the potential discovery of human remains during construction: • If human remains are uncovered during ground-disturbing activities, all ground-disturbing	LTS

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
		activities will cease within an appropriate radius of the find. DWR will notify the county coroner of the county in which the remains are uncovered and a professional archaeologist to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she will contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code section 7050[c]). The NAHC will designate a most likely descendant (MLD) to dispose of the remains with appropriate dignity (California Public Resources Code section 5097.98). • After a determination that the remains are of prehistoric Native American origin, DWR will coordinate with the MLD for reburial of the remains and associated grave goods in an appropriate location. If, within 48 hours, the MLD fails to make a recommendation or reinter the remains, DWR will coordinate with the landowner to reinter the remains in a location not subject to further disturbance as provided for in California Public Resources Code section 5097.98.	

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
		• The discovery of prehistoric burials often reveals locations sensitive for the occurrence of additional archaeological material. After the initial discovery and management of human remains, a professional archaeologist working on behalf of DWR will record the site with the Native American Heritage Commission (NAHC) and the appropriate information center and, if possible, use project features to protect the site from future disturbance.	
3.5 Geology, Soils, and Paleontological Resources			
Impact 3.5-1: Risks to People or Structures Caused by Surface Fault Rupture	LTS	NA	LTS
Impact 3.5-2: Possible Risks to People and Structures Caused by Strong Seismic Ground Shaking	LTS	NA	LTS
Impact 3.5-3: Geologic Hazards from Liquefaction, Unstable Soils, and Shrink-Swell Potential	LTS	NA	LTS
Impact 3.5-4: Potential for Substantial Erosion	B	NA	B

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
Impact 3.5-5: Potential Damage to Unknown, Unique Paleontological Resources during Earthmoving Activities	LTS	NA	LTS
3.6 Hydrology and Water Quality			
Impact 3.6-1: Temporary Water Quality Effects from Stormwater Runoff, Erosion, and Spills Associated with Construction	LTS	NA	LTS
Impact 3.6-2: Long-Term Water Quality Effects from the SERP	LTS	NA	LTS
Impact 3.6-3: Potential Increased Risk of Flooding from Increased Stormwater Runoff	LTS	NA	LTS
Impact 3.6-4: Hydraulic Effects of the Proposed SERP	NI	NA	NI
3.7 Noise			
Impact 3.7-1: Increase in Temporary Noise Levels from Construction Activities	PS	**Mitigation Measure 3.7-1: Implement Measures to Reduce Temporary Noise Levels from SERP Construction** DWR will implement the following measures during construction activities: • DWR will require construction contractors, and/or DWR maintenance yard crews to	LTS

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Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]
		properly maintain and equip construction equipment with noise controls, such as mufflers, in accordance with manufacturers' specifications. • To the greatest extent feasible, construction outside of normal construction hours will be minimized or avoided completely when located in the vicinity of noise-sensitive receptors. Except under extreme circumstances (as in the case where a repair must be completed within a specific work window due to species or flood season requirements), construction activities will be limited to normal construction hours or hours identified in applicable local noise regulations. • In locations where the erosion site would have a direct line of sight to sensitive receptors, on-site equipment and stockpiles will be strategically placed where feasible to block the line of sight (and thus the direct transmission of noise) from noise source to receptor.	
Impact 3.7-2: Increase in Temporary Noise Levels Related to Construction Traffic	LTS	NA	LTS

Note:
NA No mitigation is needed.
[a] Impact Significance before Mitigation
B Beneficial

Table S-2
Environmental Impacts and Mitigation Measures for the Proposed Project

EIR Section and Impact(s)	Level of Significance before Mitigation[a]	Mitigation Measure	Level of Significance after Mitigation[b]

NI No impact
LTS Less than significant
PS Potentially significant
[b] Impact Significance after Mitigation
B The impact would be beneficial and no mitigation is required; therefore, the impact would remain beneficial.
NI No impact
LTS The impact would be less than significant and no mitigation is required; therefore, the impact would remain less than significant, whether or not mitigation has been provided to further reduce the impact.